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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,558	03/29/2004	Geun-soo Lee	29925/39912	1407

4743 7590 06/28/2005

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EXAMINER	
LEE, SIN J	

ART UNIT	PAPER NUMBER
1752	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/811,558	LEE ET AL.	
	Examiner	Art Unit	
	Sin J. Lee	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the amendment of January 18, 2005, previous 102(b) rejection on claims 1 and 2 and previous 103(a) rejection on claims 3-6 over Herbst et al'663 are hereby withdrawn. Herbst et al does not teach or suggest present method of claim 1 for forming a pattern.

2. Due to newly cited prior arts, previously indicated allowability of claims 7-17 is hereby withdrawn, and the following rejections are made non-final.

Claim Objections

3. Claim 3 is objected to because of the following informalities: on line 2 of claim 3, applicants need to change "using" to --- used ---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 recites the limitation "[t]he method according to *claim 11*" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Hatano et al (US 6,909,191 B2).

Hatano teaches *a semiconductor device* (see abstract). Since present claim 17 is written in product-by-process claim language, and since it is a typical practice in the art to strip any remaining photoresist mask after the patterning/etching step, Hatano teaches present invention of claim 17.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 7, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitchell et al (US 6,590,137 B2).

Mitchell teaches (claim 1) a multicomponent superabsorbent particle comprising at least one basic water-absorbing resin in contact with at least one acidic water-absorbing resin. As one the examples for the acidic water-absorbing resin, Mitchell teaches (claim 19) a *polyvinylphosphonic acid*. Mitchell also teaches (col.17, lines 21-28, lines 36-40) multicomponent superabsorbent particles having microdomains of the acidic resin and the basic resin dispersed in a continuous phase of a matrix resin, and as one of examples for the matrix resin, Mitchell teaches *polyvinyl alcohol*. Based on Mitchell's teaching, it would have been obvious to one skilled in the art to form multicomponent superabsorbent particles having microdomains of polyvinylphosphonic acid (as the acidic water-absorbing resin) and the basic water-absorbing resin dispersed in a continuous phase of polyvinyl alcohol (as a matrix resin) with a reasonable

expectation of obtaining superabsorbent particles that exhibit exceptional water absorption. Also, Mitchell teaches polyvinylamine as one of examples for his basic resin (claim 15). Therefore, Mitchell's teaching would render obvious present inventions of claims 7, 11, and 12 (it is the Examiner's position that Mitchell's particles comprising polyvinylphosphonic acid and polyvinyl alcohol would inherently be capable of being used as an organic anti-reflective coating composition).

10. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mougin (6,159,457).

In claim 2, Mougin teaches the following:

> 2. A method for coating keratinous substances, said method comprising:
>
> coating said keratinous substance with a cosmetic or dermatological composition comprising an aqueous solution or an aqueous dispersion containing:
>
> (a) at least one non-crosslinked polymer capable of forming, after is drying, a deposit or a film on said keratinous substances, said polymer exhibiting a critical temperature Tc for solubility in water of the LCST or UCST type ranging from 0° to 100° C.; and
>
> (b) at least one surfactant and/or at least one hydrophilic polymer, said at least one surfactant and said at least one hydrophilic polymer not exhibiting a critical temperature Tc of the LCST or UCST type ranging from 0° to 100° C.,
>
> wherein said at least one surfactant and/or said at least one hydrophilic polymer is capable of establishing a physical interaction with said at least one non-crosslinked polymer.

As example for the "at least one hydrophilic polymer", Mougin includes polyvinyl alcohol and polyvinylphosphonic acid polymer (see col.5, lines 13-35). Since Mougin teaches that there can be at least one hydrophilic polymer, it would have been obvious to one skilled in the art to use both polyvinyl alcohol and polyvinylphosphonic acid as the hydrophilic polymers in Mougin's composition with a reasonable expectation of obtaining a film exhibiting satisfactory mechanical and cosmetic properties which do not

change in the envisaged cosmetic application. Mougin also teaches (col.5, lines 36-41) that those hydrophilic polymers are present in the composition in the preferred amount of 10-30% by weight. Assuming one uses the polyvinyl alcohol and polyvinylphosphonic acid in equal amount, this will give 5-15% by weight for each polymer. Mougin also teaches amine salts and ammonium salts as some of examples of the surfactant to be used in his composition discussed above (see col.5, lines 52-61). Thus, Mougin's teaching renders obvious present inventions of claims 7-12 (it is the Examiner's position that Mougin's composition comprising polyvinylphosphonic acid and polyvinyl alcohol would inherently be capable of being used as an organic anti-reflective coating composition).

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1 and 2 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, and 7 of copending Application No. 10/891,568. Although the conflicting claims are not identical,

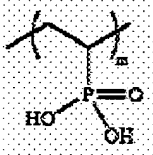
they are not patentably distinct from each other because of the following reasons:

claims 1, 2, and 7 of App.'568 state the following,

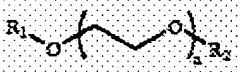
1. An organic anti-reflective coating composition comprising a polymer represented by the following general formula I; and

any one selected from a group consisting of a polymer represented by the following general formula II, a polymer represented by the following general formula III and a mixture thereof:

Formula I



Formula II



$NH_{2\,(CH_2)_p}(OCH_2CH_2)_qO(CH_2)_pNH_2$ Formula III

wherein in the above formulas, each of m and n is an integer ranging from 5 to 5,000; each of p and q is an integer ranging from 1 to 100; and R1 and R2 may be same or different from each other, and represent H, alkyl group or fluoroalkyl group having C1-C10.

2. The composition according to claim 1, wherein all of the polymers represented by the above formula I, II and III have an average molecular weight ranging from 2,000 to 10,000.

7. A method for forming pattern on a semiconductor device comprising the steps of:

(a) coating a photoresist film on a semiconductor substrate formed with a desired bottom structure;

(b) applying the top anti-reflective coating composition according to claim 1 on the top portion of the photoresist film;

(c) exposing and developing the exposed photoresist film to produce the desired photoresist pattern.

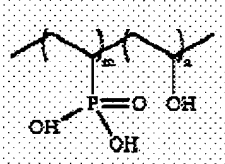
Therefore, claims 1, 2, and 7 of App.'568 renders obvious present inventions of claims 1 and 2.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

13. Claims 1-17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 and 16 of copending Application No. 10/903,076. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reasons:

Claims 1, 7 and 11 of App.'076 state the following,

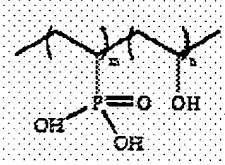
1. A top anti-reflective coating polymer represented by the following formula I:



[formula I]

wherein each of m and n is an integer ranging from 5 to 5,000.

7. A top anti-reflective coating composition comprising a polymer represented by the following formula I:



[formula I]

wherein each of m and n is an integer ranging from 5 to 5,000.

> 11. A method for forming pattern on a semiconductor device comprising the steps of:
>
> (a) coating a photoresist pattern film on a semiconductor substrate formed with a desired bottom structure;
>
> (b) applying the top anti-reflective coating composition according to claim 6 on top portion of the photoresist film;
>
> (c) exposing the photoresist film; and
>
> (d) developing the exposed photoresist film to produce the desired photoresist pattern.

Therefore, App.'076 renders obvious present inventions of claims 1, 2, 7, and 13.

Claims 2 and 6 of App.'076 renders obvious present inventions of claims 3. Claims 3-5 of App.'076 renders obvious present inventions of claims 4-6. Claim 8 of App.'076 renders obvious present inventions of claims 8-10. Claims 9 and 10 of App.'076 renders obvious present inventions of claims 11 and 12. Claim 12 of App.'076 renders obvious present invention of claim 14. Claims 13 and 14 of App.'076 renders obvious present inventions of claims 15 and 16. Claim 16 of App.'076 renders obvious present invention of claim 17.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Lee
June 24, 2005

SIN LEE
PRIMARY EXAMINER